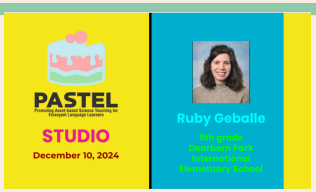
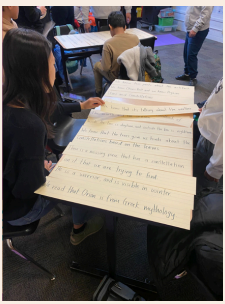
Ruby's Studio Day

Incorporating family knowledge into students' scientific writing about astronomy, as they work to decode an ancient artifact



On December 10th, 2024, a group of Promoting Asset-based Science Teaching for Emergent Language Learners (PASTEL) Teachers and Researchers joined Ruby's (Cohort 1) 4th-grade and 5th-grade classrooms at Dearborn Park Elementary. Both the 4th and 5th grade classes were working on revising scientific writing about an ancient artifact that depicts how the seasons of the year are connected to different constellations. The studio day was a collaborative endeavor to both consider how students might revise their scientific writing and thinking and how they might meaningfully incorporate family knowledge and home connections into their scientific explanations.

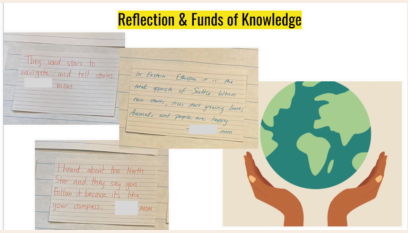
What we tried

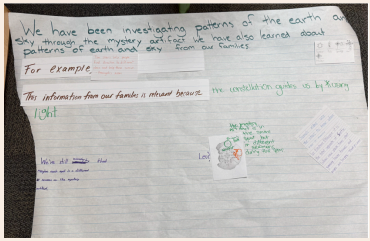


We started the Studio Day by previewing the lesson that Ruby would teach to the 4th grade group, which she had planned in collaboration with Kerry and Jessica. The class had collaboratively written a paragraph explaining their current thinking about the artifact, which was written up on sentence strips, and students were asked in table groups to revise the paragraph by rearranging, ripping and adding to the sentence strip to construct a paragraph that better represented their thinking. We ran out of time within this lesson to bring in the home connections. Afterwards, we debriefed, analyzed student work, and discussed how students could benefit from more scaffolding around the goals of revising, particularly with attention to who the audience might be for these revisions. We discussed possibilities such as having the revisions be written as letters to their families.

Resources

Video summary of the studio day	Funds of knowledge reading	Strawberries in Watsonville article

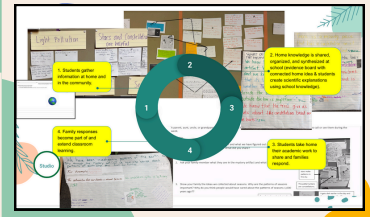




Continuing with the theme of incorporating family knowledge, we then turned our attention to planning the 5th grade lesson. We reviewed the family knowledge that had been shared, which was written out on cards, and read and discussed a short article about funds of knowledge.

We then collaboratively re-designed the 5th grade lesson, so that:

- Students would work directly with the family knowledge notecards
- Ruby would model how to incorporate family knowledge into the scientific explanation paragraph
- The revision would be scaffolded to focus on one element at a time (incorporating family knowledge, removing extra sentence, and including evidence)



As we debriefed this experience, we discussed the PASTEL Cake Commitment of Cultures, Families, and Communities as rightfully belonging. Participants remarked on how students spontaneously made connections to family experiences in the second lesson (for example, referencing looking at the stars with a brother) that likely wouldn't have come up in the first lesson.

What we learned

Teachers discussed coming away from this studio with appreciation for what it can concretely look like to bring family knowledge into science curriculum. As researchers, we further theorized the process through referring to a home-school curriculum development cycle described in the article "Strawberries in Watsonville" (Morrison, 2017). We adapted the cycle to describe and extend what we saw Ruby doing during the studio day (See "What to try in your classrooms" below for more information on this cycle.)

What to try in your classrooms

Consider exploring this cycle (modified from Morrison, 2017) as part of your science teaching:

- Students gather information at home and in the community. At the beginning of the unit, send home a request for family stories.
- Home knowledge is shared, organized, and synthesized at school. Create an evidence board with home knowledge and refer to it routinely.
- Students take home their academic work to share and families respond. Toward the end of the unit, send home the class explanation and make connections to family stories.
- Family responses become part of and extend classroom learning. End by using family stories as a central part of the knowledge building, i.e. create a class letter that incorporates multiple stories into the science explanation.